

Batteries and secure energy transitions Luxembourg

Are batteries a key role in energy transitions?

Batteries are set to play a leading role in secure energy transitions. They are critical to achieve commitments made by nearly 200 countries at COP28 in 2023. Their commitments aim to transition away from fossil fuels and by 2030 to triple global renewable energy capacity and double the pace of energy efficiency improvements.

Are batteries the key to a sustainable future?

Those pledges include tripling global renewable energy capacity by 2030, doubling the rate of energy efficiency improvements, and facilitating the transition away from fossil fuels. Batteries have an essential role to support of the goal of tripling the installed capacity of renewables worldwide.

What's new in battery technology?

These include tripling global renewable energy capacity, doubling the pace of energy efficiency improvements and transitioning away from fossil fuels. This special report brings together the latest data and information on batteries from around the world, including recent market developments and technological advances.

Who wrote the IEA special report on batteries & secure energy transitions?

I would like to thank the IEA colleagues who worked on this special report on Batteries and Secure Energy Transitions for their excellent and insightful analysis - under the leadership of Laura Cozzi, Director of Sustainability, Technology and Outlooks, and lead authors Brent Wanner and Apostolos Petropoulos.

What is the future of battery storage?

Batteries account for 90% of the increase in storage in the Net Zero Emissions by 2050 (NZE) Scenario, rising 14-fold to 1 200 GW by 2030. This includes both utility-scale and behind-the-meter battery storage. Other storage technologies include pumped hydro, compressed air, flywheels and thermal storage.

How do batteries improve energy security?

Batteries also play a critical role to enhance energy security. By helping to reduce fossil fuel demand in multiple sectors, they cut fossil fuel requirements in importing countries, thus increasing their level of domestic energy independence.

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Batteries in EVs and storage installations reduce the need for imported fossil fuels, increasing self-sufficiency in many countries. There is a need for policy and regulatory frameworks to ensure that batteries can participate in markets and are remunerated appropriately for the services they provide to the power system.

Batteries are key to the transition away from fossil fuels and accelerate the pace of energy efficiency through electrification and greater use of renewables in power. In transport, a growing fleet of EVs on the road displaces the need for 8 million barrels of oil per day by 2030 in the Net Zero Emissions by 2050 (NZE) Scenario, more than the ...

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4 International Energy Agency | Batteries and Secure Energy Transitions Governments have an important part to play in building out resilient local and international supply chains to ensure that securely and sustainably produced batteries come to market at a reasonable cost. Legislation such as the Inflation Reduction Act in the United States, the

In the NZE Scenario, about 60 per cent of the CO₂ emissions reductions in 2030 in the energy sector are associated with batteries, making them a critical element. Batteries in EVs and storage installations reduce the need for imported fossil fuels, increasing self-sufficiency in many countries.

The energy sector has propelled growth in the global battery market. In 2016, the energy sector made up around half of global battery demand... by 2023, the energy sector accounted for more than 90% of a market that was ten times larger. Global battery market in 2016 (energy sector share = 50%) Global battery market in 2023 (energy sector share ...

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made by nearly 200 countries at COP28 in 2023. Their commitments aim to transition away from fossil fuels and by 2030 to triple global renewable energy capacity and double the pace of energy efficiency improvements.

delivering clean energy transitions and protecting energy security. Batteries will be critical to achieving the energy goals agreed by nearly 200 countries at the COP28 climate change conference in Dubai, notably tripling renewable energy capacity by 2030, doubling the pace of energy efficiency improvements and transitioning away from fossil fuels.

The IEA's Special Report on Batteries and Secure Energy Transitions will highlight the important role of battery technologies to fulfil recent commitments made by nearly 200 countries at COP28, including tripling global renewable energy capacity by 2030, doubling the pace of energy efficiency improvements by 2030 and transitioning away from ...

Batteries are an important part of the global energy system today and are poised to play a critical role in secure clean energy transitions. In the transport sector, they are the essential component in the millions of electric vehicles sold each year. In the power sector, battery storage is the fastest growing clean energy technology on the market.

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